Customer No.	**026418**	
IN THE UNITED STATES PATENT AND TRADEMARK OFFICE		
Attorney's Docket No.:	**GK-OEH-217/500814.20119**	
U.S. Application No.:		
International Application No.:	**PCT/DE2004/001490**	
International Filing Date:	**JULY 02, 2004**	**02 JULY 2004**
Priority Date Claimed:	**JULY 02, 2003**	**02 JULY 2003**
Title of Invention:	**METHOD FOR SEPARATING FLAT CERAMIC WORKPIECES WITH A CALCULATED RADIATION SPOT LENGTH**	
Applicant(s) for (DO/EO/US):	**Juergen WEISSER, Stefan ACKER and Ronny ULLMANN**	

VERIFIED ENGLISH TRANSLATION OF AMENDED CLAIMS

TRANSLATOR'S CERTIFICATE

I, Daniel Cooper, residing at 1310 Felicity Street, New Orleans, Louisiana 70130, declare:

That I am thoroughly conversant with the German and English languages;

That I have carefully made the attached translation from the original document, written in the German language;

That the attached translation is a true and correct English version of such original, to the best of my knowledge and belief;

I further declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the patent or trademark.

Daniel Cooper

Dated: November 21, 2005

Patent Claims

1. Method for splitting flat ceramic workpieces through provocation of a separation crack due to stresses occurring as a result of temporal and local application of heat by means of laser along a desired splitting line and, following this, a temporal and local removal of heat by means of a coolant, wherein the laser radiation forms a beam spot on the workpiece, the length of the beam spot in the direction of the splitting line being greater than the width of the beam spot perpendicular to the splitting line, and the beam spot length is so adjusted depending upon the thermal conductivity of the workpiece and the material thickness of the workpiece that it is as small as necessary for achieving the required temperature gradient for generating the splitting crack in spite of thermal conduction but is also as large as possible in order to achieve the fastest possible introduction of heat and, therefore, a high process speed, wherein the beam spot length is calculated from the following formula:

$l = 8 \times d \times 24 / WLF$,

where l is the length of the beam spot, WLF is the thermal conductivity of the ceramic to be split, and d is the thickness of the ceramic workpiece to be split.

2. deleted

3. Method according to claim 1, characterized in that no initial crack is generated for initiating the splitting process.

4. Method according to one of claims 1 to 3, characterized in that the internal stresses of the workpiece along the desired splitting line are determined before the start of the splitting process and the output or the speed is so controlled in a spatially-oriented manner during the splitting process while taking into account the internal stresses that the thermal stresses and the internal stresses along the splitting line, in sum, achieve the breaking stress needed for crack formation.

5. Method according to claim 1, 3 or 4, characterized in that the workpiece is held on a workpiece support accompanied by pretensioning in order to generate additional stresses reinforcing the process stresses.

6. Method according to one of claims 1 or 2, characterized in that the workpiece is fixed to the workpiece support, on which the workpiece is also held in the same manner during the splitting process, for measuring the internal stress.